

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

MISSOURI CLEAN WATER COMMISSION



**MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0117331

Owner: Kerr-McGee Corporation  
Address: PO Box 25861, Oklahoma City, OK 73125

Continuing Authority: Same as above  
Address: Same as above

Facility Name: Kerr-McGee Chemical, LLC  
Address: 2800 West High Street, Springfield, MO 65801

Legal Description: S ½, NE ¼, Sec. 9, T29N, R22W, Greene County

Receiving Stream: Outfall #001 - Unnamed Tributary to Spring Branch (U)  
Outfall #002 - Unnamed Tributary to Wilson Creek (U)

First Classified Stream and ID: Outfall #001 - Spring Branch(P)(01385)  
Outfall #002 - Wilson Creek(P)(02375) 303(d)list

USGS Basin & Sub-watershed No.: Outfall #001 - (10290106-050004)  
Outfall #002 - (11010002-020001)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

**FACILITY DESCRIPTION**

Outfalls #001 & #002 - Stormwater runoff from facility involved in wood treating -  
SIC #2491

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

December 13, 2002  
Effective Date

  
Stephen M. Mahford, Director, Department of Natural Resources  
Executive Secretary, Clean Water Commission

December 12, 2007  
Expiration Date  
MO 780-0041 (10-93)

Jim Hull, Director of Staff, Clean Water Commission

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 2 of 8	
					PERMIT NUMBER MO-0117331	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #001 &amp; #002</u> Flow	MGD	*		*	once/quarter**	24 hr. estimate
Chemical Oxygen Demand	mg/L	120		90	once/quarter**	grab***
Settleable Solids	mg/L	1.5		1.0	once/quarter**	grab***
pH - Units	SU	****		****	once/quarter**	grab***
Oil & Grease	mg/L	15		10	once/quarter**	grab***
Phenol	mg/L	1.7		0.1	once/quarter**	grab***
<u>Creosote Constituents</u> Acenaphthene	mg/L	1.2		1.2	once/quarter**	grab***
Acenaphthylene	mg/L	Note 2		Note 2	once/quarter**	grab***
Benzo(A)Anthracene (Note 1)	ug/L	5		5	once/quarter**	grab***
Dibenzo(A)Anthracene (Note 1)	ug/L	5		5	once/quarter**	grab***
Benzo(A)Pyrene (Note 1)	ug/L	5		5	once/quarter**	grab***
Benzo(A)Fluoranthene (Note 1)	ug/L	5		5	once/quarter**	grab***
Chrysene (Note 1)	ug/L	5		5	once/quarter**	grab***
Fluoranthene	µg/L	300		300	once/quarter**	grab***
Flourene	mg/L	1.3		1.3	once/quarter**	grab***
Indeno(1,2,3-CD)Pyrene (Note 1)	ug/L	5		5	once/quarter**	grab***
Naphthalene	µg/L	20		20	once/quarter**	grab***
O-Cresol	mg/L	3.9		3.9	once/quarter**	grab***
Guaiacol	mg/L	*		*	once/quarter**	grab***
Anthracene	mg/L	9.6		9.6	once/quarter**	grab***
<u>Outfall #002</u> Whole Effluent Toxicity (WET) Test	% Survival	See Special Condition #16			twice/year	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE <u>April 28, 2003</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Part I</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* Monitoring requirement only.
- \*\* Sample once per quarter in the months of March, June, September & December.
- \*\*\* A representative grab sample shall be collected during the first hour of rainfall which exceeds 0.1 inches and results in a discharge.
- \*\*\*\* pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

Note 1 - You must use EPA method 8270 which has a quantification limit of no greater than 5.0 ug/L. For reporting purposes on the discharge monitoring report (DMR), all analytical values below 5.0 ug/L shall be reported as "<quantlim." Values below the quantification limit will be considered in compliance. All analytical values at or above the quantification limit of 5.0 ug/L shall be reported as the measured value.

Note 2 - There shall be no discharge of this chemical per 10 CSR 7.031 (4)(B).

C. SPECIAL CONDITIONS

Note: These requirements do not supercede nor remove liability for compliance with county and other local ordinances.

1. Report as no-discharge when a discharge does not occur during the report period.
2. The discharge of storm water from these facilities shall not cause a violation of the state water quality general criteria 10 CSR 20-7.031(3).
3. Permittee shall adhere to the following Best Management Practices (BMP's):
  - a. Prevent the spillage or loss of fluids, oil, grease, fuel, etc. and thereby prevent the contamination of storm water from these substances.
  - b. Provide collection facilities and arrange for proper disposal of waste products including but not limited to industrial process wastes, petroleum waste products, and solvents.
  - c. Store all process materials, paint, solvents, petroleum products and petroleum waste products(except fuels), and storage containers (such as drums, cans or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention, control, and/or management entering a water of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
  - d. Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
  - e. Designate an individual as responsible for environmental matters. Provide for inspection by facility staff, weekly, of any structures that function to prevent pollution from storm water or to remove pollutants from storm water and of the facility in general to ensure that any Best Management Practices are continually implemented and effective. Records of inspection must be kept onsite and made available to DNR upon request.
  - f. Train all involved personnel in material handling and storage, and housekeeping of maintenance areas. Proof of training shall be submitted upon request.
4. All fueling facilities present on the site shall adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers, including spill prevention, control and counter measures.

C. SPECIAL CONDITIONS (continued)

5. Water that has accumulated in secondary containment areas must be examined for possible contamination and tested if necessary. When the presence of contaminants is indicated, water shall be treated before release or taken to a permitted treatment facility if it does not meet permit limits.
6. Substances, including wood treating chemicals, regulated by federal law under the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), that are transported, stored or used shall be managed according to RCRA and CERCLA.
7. There shall be no release of polychlorinated biphenyl (PCB's) to water of the state at or above the level of quantification currently defined as 1 µg/L or 1 ppb.
8. This permit may be reopened and modified, or alternatively revoked and reissued, to:
  - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
    - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
    - (2) controls any pollutant not limited in the permit.
  - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
  - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
9. Within thirty (30) days of permit issuance, permittee shall construct a permanent marker or monument at sampling location (outfall).
10. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
    - (1) One hundred micrograms per liter (100 µg/L);
    - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
    - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
    - (4) The level established in Part A of the permit by the Director.
  - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
11. All outfalls must be clearly marked in the field.
  12. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

C. SPECIAL CONDITIONS (continued)

13. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

- (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
- (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
- (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
- (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
- (e) There shall be no significant human health hazard from incidental contact with the water;
- (f) There shall be no acute toxicity to livestock or wildlife watering;
- (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
- (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

14. Reporting of Effluent Violations

If any of the sampling results from any of the outfall show any violation of the permit discharge limitations, written notification shall be made to the Department of Natural Resources within five (5) days of notification of analytical results. Notification shall indicate the date(s) of sample collection, the analytical results, and permit number, and shall include a statement concerning the revisions or modifications in management practices that are being implemented to address the violation of the limitations that occurred.

After a violation has been reported, a sample of storm water runoff resulting from the next rainfall greater than 0.1 inches shall be collected at outfall(s) for which the writing to the Department of Natural Resources (this paragraph supercedes Part I, Section B: e. A Noncompliance Notification).

15. Records Retention and Reporting

Monitoring reports shall be submitted within 28 days after the end of each quarter. All sampling data shall be maintained by the permittee for a period of five (5) years and shall be supplied to the Department of Natural Resources upon written request (superceded Part I. Section A: 7. Records Retention). A copy of all of the sampling data must be submitted with an application for reissuance of this permit.

16. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT					
OUTFALL	A.E.C.	LIMIT	FREQUENCY	SAMPLE TYPE	MONTH
#002	100%	No significant mortality	twice/year	Grab	July & January

C. SPECIAL CONDITIONS (continued)

16. Whole Effluent Toxicity (WET)(continued)

a. Test Schedule and Follow-Up Requirements

- (1) Perform a single-dilution test in the months and at the frequency specified above.

If the effluent passes the test, do not repeat the test until the next test period. Submit results with the quarterly report.

If the effluent fails the test, a multiple dilution test shall be performed within 30 days, and biweekly thereafter, until one of the following conditions are met:

- (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
  - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (2) The permittee shall submit a summary of all test results for the test series to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 days of the third failed test. DNR will contact the permittee with initial guidance on conducting a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE). The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 days of the date of DNR's letter. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (3) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (4) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (5) In addition to the WET test summary report required in part (2), all failing test results shall be reported to DNR within 14 days of the availability of the results.
- (6) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October. When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

b. PASS/FAIL procedure and effluent limitations

- (1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level;  $p = 0.05$ ) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

C. SPECIAL CONDITIONS (continued)

16. Whole Effluent Toxicity (WET)(continued)

b. PASS/FAIL procedure and effluent limitations (continued)

(2) To pass a multiple-dilution test:

- (a) the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the  $LC_{50}$  concentration for the most sensitive of the test organisms; or,
- (b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

c. Test Conditions

- (1) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing should come from cultures reared for the purpose of conducting toxicity tests and should be cultured in a manner consistent with the most current USEPA guidelines. All test animals should be cultured as described in EPA-600/4-90/027.
- (2) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
- (3) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (4) Tests should be initiated immediately after the sample is collected, but tests must be initiated no later than 36 hours after sample collection.
- (5) Single-dilution tests will be run with:
  - (a) Effluent at the AEC concentration;
  - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
  - (c) reconstituted water.
- (6) Multiple-dilution tests will be run with:
  - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
  - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
  - (c) reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

**SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS**

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless otherwise specified by MDNR, procedures should be consistent with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA/600/4-90/027.

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at $p \leq 0.05$ )
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at $p \leq 0.05$ )
Test Acceptability criterion:	90% or greater survival in controls